

## Ship Design

The ship pictured is the *S.S. Herbert C. Jackson*, a Great Lakes ore carrier owned by Interlake Steamship Division of Pickands, Mather and Company, Cleveland, Ohio. Built in 1958, the *Jackson* was converted in the latter 1970s to a self-unloading ship, one capable of discharging its cargo by means of its own on-board equipment rather than shore-based unloading systems. During the engineering stage of the vessel's conversion, the Cleveland firm Marine Consultants & Designers, Inc. applied the computer program SHCP (Ship Hull Characteristics Program) for estimating hull shear forces and bending moments to insure structural adequacy of the *Jackson*. One of many computer programs made available to industry by NASA's Computer Software Management and Information Center (COSMIC)<sup>®</sup> at the University of Georgia, SHCP is a composite program designed to solve basic naval architecture problems and to

assess the integrity and stability of a ship design.

Marine Consultants & Designers, Inc., is a leader in development of innovative designs for self-unloading bulk cargo carriers. The company also performs engineering services related to design of tankers, tugboats and other forms of marine transportation. In its engineering work, the firm makes extensive use of COSMIC's SHCP, which provides highly accurate results, helps improve process efficiencies and contributes to increased product safety and reliability. Marine Consultants & Designers, Inc. reports that its use of SHCP has improved the firm's structural design capabilities and reduced design development time, with consequent annual savings of substantial order.

<sup>®</sup>COSMIC is a registered trademark of the National Aeronautics and Space Administration.

